

Developing a public health emergency operations plan: a primer

Mark Keim*

sary to make the EOP more than a paper plan, (or a "paper tiger"). Training and exercises depend on an EOP. Second, the EOP facilitates response and short-term recovery by making decisions in advance of time-intensive disaster events. Finally, an EOP provides a jurisdiction with a focus of resources for risk-based preparedness measures.

Introduction

Recent studies by the Centers for Disease Control and Prevention (CDC) have revealed an endemic lack of emergency operations planning among health and medical sectors of Oceania.¹ Public health and hospital officials have few references available for guidance in planning and preparing for national health emergencies.

This primer for developing a public health emergency operations plan is adapted from *Guide for All-Hazard Emergency Operations Planning: State & Local Guide 101*,² with an updated focus on public health emergencies that are also common to the Pacific basin.

The model for emergency planning discussed in this primer is being offered by the Pacific Emergency Health Initiative (PEHI) as a standard template for plan development among Pacific jurisdictions. During 2001, 11 Pacific jurisdictions applied the PEHI model to develop basic plans that will serve as a foundation for comprehensive public health emergency operations plans (EOPs).

Preliminary considerations for emergency operations planning

The centerpiece of disaster management is the EOP. First, the EOP defines the scope of preparedness activity neces-

Functions of an EOP

Disaster plans or EOP's, (as they will be referred to for the purposes of this discussion), provide a public document for the development of contingencies and assignment of responsibilities in the case of catastrophic events. The functions of a jurisdiction's emergency operations plan are listed as follows:

- Assigns responsibility to organizations and individuals for carrying out specific actions at projected times and places in an emergency.
- Sets forth lines of authority and organizational relationships, and shows how all actions will be coordinated.
- Identifies personnel, equipment, facilities, supplies, and other resources available for use during response.
- Identifies steps to address mitigation concerns during response activities.

A functional all-hazards approach: task-based planning. Risk, including that of health emergencies and disasters, has been described in terms of being caused by either natural or human-made hazards. Although this classification may serve to conceptualize the subject and facilitate discussion, classifying risk as based on either natural or human-made hazards is often arbitrary. In fact, risk is usually a function of many contributing hazards in association with numerous vulnerabilities among the population. Therefore, effective strategies should then seek to broaden the scope of management to include an "all-hazard approach". Strategies should also account for the fact that many of the factors affecting population vulnerability are complex and not necessarily a function of the most obvious indicators.

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*Emergency Preparedness and Response Branch, National Center for Environmental Health, Centers for Disease Control & Prevention, Atlanta, GA USA. Contact: Mark Keim, National Center for Environmental Health, Centers for Disease Control & Prevention, 4770 Buford Highway, MS-F38, Atlanta, GA USA 30341-3724. E-mail: mkeim@cdc.gov

While the causes of emergencies may vary greatly, the potential effects of emergencies do not. For example, earthquakes, floods, volcanoes, and hurricanes all have the potential to displace people from their homes. Displacement would require organization involving mass care/shelter. As another example, the primary cause of death as a result of both hurricanes and flash floods is drowning. Response mechanisms should be focused on prevention and control measures for this common health threat for both types of disasters. Thus, a jurisdiction can plan to deal with effects common to several hazards, rather than develop separate plans for each hazard. The jurisdiction can then develop a plan and an organization around common tasks or functions that must be performed. It can also assign responsibility for accomplishing each function, and ensure that tasked organizations have prepared Standard Operating Procedures (SOPs) that detail how they will carry out critical tasks associated with the larger function.

Several benefits are inherent in this task-based approach:

- (1) It avoids duplication of planning effort for every hazard.
- (2) It serves in all hazard situations, even unanticipated ones.
- (3) It permits emphasis on hazards that pose the greatest risk to the jurisdiction through an addition to the basic plan that includes hazard-specific appendices.

Components of an EOP

EOPs developed using a functional approach consist of the following elements:

- The basic plan
- Functional annexes
- Hazard-specific appendices
- SOPs and checklists

Elements of a basic plan

The basic plan guides the development of the more operationally oriented functional annexes. However, its primary intended audience consists of the jurisdiction's chief executive, his/her staff and the agency heads. Therefore, the focus of the basic plan should be to meet the informational needs of that target audience without presenting an unnecessary level of operational detail.

The Basic plan establishes guidelines for emergency response organization and policies. It cites the legal authority for emergency operations, summarizes the situations addressed by the EOP, explains the general concept of operations and assigns responsibilities for emergency planning and operations.

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These elements are developed to progress according to ever-increasing levels of specificity and for detail. The Basic Plan develops the framework for planning in the broadest sense. The basic criterion for developing the parts of the EOP is this: What does the entire audience of this part of the EOP need to know, or have set out as a matter of public record? Parts of the EOP are discussed in detail in the following sections.

In most cases, the basic plan should include the following:

- 1) Introductory material
- 2) Purpose
- 3) Situation and assumptions
- 4) Concept of operations
- 5) Organization and assignment of responsibilities
- 6) Administration and logistics
- 7) Plan development and maintenance
- 8) Authorities and references

Introductory material

The introductory material should contain the following:

Promulgation document. This document is usually a letter signed by the jurisdiction's chief executive that:

- declares the EOP is in force and cites the legal basis for such;
- identifies organizations' responsibilities to prepare and maintain SOP's;
- commits organizations to training, exercises and plan maintenance; and
- allows the chief executive to affirm support for emergency management.

Signature page. Some jurisdictions may choose to include a signature page from the heads of those organizations that have coordinated the plan's development and are committed to its implementation.

Detailed title page and record of changes. Any changes to the plan should be accompanied by a description of the change that has been also signed and dated. This assures that users of the plan are certain to be using the same version.

Record of distribution. This is a list of individuals and organizations that receive a copy of the EOP. It provides evidence that tasked entities have had the opportunity to read and understand their responsibilities, which is a basic assumption of the EOP.

Tables of contents: The tables of contents should list all sections of the entire EOP, including annexes and appendices.

Purpose: The basic plan should include a general statement of the purpose of the EOP, supported by a synopsis of the plan, the annexes and the hazard-specific appendices.

Situation and Assumptions: The situation section of the basic plan characterizes the relative probability and impact of hazards, and identifies vulnerability among critical human and material assets, limitations of resources, etc. It makes clear why emergency operations planning is necessary. Examples of assumptions needed for the purpose of planning are that

- stated hazards will occur
- assistance will be needed
- responders will be familiar with the plan, etc.

Concept of operations

This section of the basic plan explains the jurisdiction's overall approach to an emergency situation. It includes a general sequence of action, touching on each of the functions to be explained in detail later in within the functional annexes.

Organization and assignment of responsibilities: This section of the basic plan includes a listing by position and organization of what kind of tasks are to be performed. It defines responsibility and guides a coordinated response. A matrix table serves well to illustrate graphically those individuals or groups according to their respective primary or secondary responsibilities. Tasks that are assigned are more specifically detailed within the functional annex. In addition, some tasks are identified within this section of the plan that will be common to all response organizations.

The following is a partial list offered as a non-prescriptive example of the agencies, organizations, and individuals to which this section of a national EOP would likely assign responsibilities:

- Chief Executive Official, CEO
- Fire Department
- Police or Public Safety
- Public Health Official
- Hospital or Medical Administrator(s)
- Public Works
- Warning Coordinator
- EOC Manager
- Emergency Manager
- Communications Coordinator
- Public Information Officer
- Evacuation Coordinator
- Mass Care Coordinator
- Resource Manager
- Education Department
- Non-Governmental Aid Organizations

For an EOP based within the Ministry level, (such as that for the Ministry of Health in this particular case), those individu-

als or groups identified operate similarly to their counterparts on the national level. The following is a partial list offered as an example of the groups and individuals to which responsibilities would likely be assigned with this section of a Health Ministry EOP:

- Minister of Health
- Directors
- Health Services Administrator
- Ministry Public Information Officer
- Ministry of Health Liaison to the National EOC
- Communications Coordinator
- Evacuation Coordinator
- Resource Manager
- Education Division
- Mass Care Coordinator
- Chief of Medical Staff
- Public Health Administrative Staff
- Environmental Health Division
- Behavioral Health Division
- Epidemiology Division/Needs Assessment Team
- Dental Division
- Medical Division
- Nursing Division
- Outpatient Clinics
- Ambulance Services
- Field Response and Medical Outreach Team
- Hospital Departments
- Rehabilitation
- Wards
- Emergency Department
- Pharmacy
- Diagnostic services
- Medical records
- Central supply
- Security
- Facility maintenance and engineering
- Custodial services
- Laundry
- Food service
- Administration & clerical staff

Administration and logistics. This section of the basic plan describes general policies for availability of services, resource management, and for support requirements. It references mutual aid agreements and staffing of employees and volunteers. It also broadly outlines methods for tracking resource needs, financial records, and reporting, and it contains general references to procedures for emergency allocations and procurements.

Plan development and maintenance. This section of the basic plan usually delineates the approach to planning that includes the elements for funding and the planning cycle. Planning should be viewed as a cycle - a dynamic ongoing process that will require modest yet continual support from the jurisdictional budget.

Funding support. One of the most critical initial steps involved in national level planning is to identify and procure funds to pay for the process of plan development and maintenance over time.

The planning cycle. The basic plan should also include an outline of the planning process itself. This outline and its associated timeline would include the following:

- Assignment of a permanent planning coordinator
- Designation of planning committee participants and assignment of responsibilities according to the various plan sections and levels of detail, (basic plan, annexes & appendices and SOPs).
- Plans for exercise development and implementation that will test the various aspects of the plan and validate its assumptions and processes.
- Plan review according to findings of the validation exercise.
- A schedule for the continuous and repetitive cycle of validation and testing followed by review and revision or updating of the EOP.

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Table 1 shows the phases of the planning cycle and the activities associated with each phase.

Authorities and References

The final section of a basic plan often indicates the legal basis for emergency operations and activities. It may state laws, statutes, executive orders, regulations or formal agreements. It frequently specifies the boundaries of authority granted to the CEO and other elected officials in circumstances of emergencies. This section also cites reference materials used to develop or augment the EOP.

Functional Annexes

Content of a Functional Annex. Functional annexes are plans organized around the performance of a broad task. Each annex focuses on one of the critical emergency functions that the jurisdiction will perform in response to an emergency or disaster. They are meant to guide operations performed by those responders who will perform the tasks.

Functional annexes are the part of the EOP that provides specific operational detail: the who, what, where, when and how of the plan. Annexes define policies, procedures, roles, and responsibilities associated with each emergency function. Annexes broadly outline the plan for any activity to be performed by anyone with a responsibility for that function. The specific step-by-step implementation of the task as identified in the Functional Annex is then later detailed within the subcategory of SOPs and checklists associated

with that function.

The structure for description of a functional annex is similar to that described for the basic plan:

- Purpose
- Situation and assumptions
- Concept of operations
- Organization and assignment of responsibilities
- Administration and logistics
- Plan development and maintenance
- Authorities and references

Core Functions. No single listing of functional annexes can be described for the public health of all jurisdictions. Functions may vary according to needs, resources and capacity of the region. Core functions on a national level may also vary considerably from that of a Health Ministry level plan. These functions or tasks are best identified according to the hazards and vulnerabilities of the specific jurisdiction. Specific subtasks are identified by the Health Ministry and outlined in general terms under the heading

of each category within the functional annex. Those people who have the responsibility for performance of these subtasks are then called upon to develop a set of step-by-step procedures within the SOPs and checklists.

A certain number of functions or tasks may be "generalizable" to most instances of emergency response. The functions listed below are common examples and are not here prescribed as all-inclusive. These core functions may include the following general tasks:

- Direction and control
- Communications
- Alert and warning
- Emergency public information
- Evacuation or population protection measures
- Mass shelter and care
- Health and medical services
- Resource management

Other typical functional annexes as related specifically to emergency public health may also include:

- Damage and needs assessments
- Damage repair of critical infrastructure
- Disease surveillance & control
- Food distribution
- Animal and vector control
- Search and rescue
- Mortuary care
- Security
- Hazardous materials response
- Water and sanitation

Table 1. The Public Health Emergency Operations planning cycle

Phase	Associated activities
Research	Review the jurisdiction's planning framework and laws Identify hazards, prioritize risks, and create scenarios Determine the resource base Note characteristics of the jurisdiction that could affect emergency operations
Development	Develop a rough draft of the comprehensive EOP Develop agenda lists and invitation lists for planning meetings Brief Minister of Health Establish EOP planning committee Establish subcommittees for development of EOP sections to include basic plan, functional annexes and hazard-specific appendices Work with committees on successive drafts Designate and task organizations to develop SOPs and checklists Prepare necessary graphics and support documents Obtain consultations in support of planning details Produce final draft of EOP and circulate to committees for review and comment Brief Minister of Health Obtain concurrence from organizations identified with responsibilities for implementing EOP Present the EOP to elected officials Print and distribute EOP
Validation	Check plan for conformity to applicable regulatory requirements and continuity Conduct a "table top" exercise of the EOP involving key representatives of each tasked organization Review the EOP as applied to lessons learned in "table top" exercise Field test plan using limited functional management exercises Review the EOP as applied to lessons learned in functional management exercises Evaluate plan using full scale field test of entire disaster management system Review the EOP as applied to lessons learned in full-scale field test Produce final draft of EOP and circulate to committees for review and comment
Maintenance	Update personal contact information Check equipment and supplies Test the activation and warning system Develop a remedial action process that includes annual exercises and critiques Establish a regular schedule for EOP plan review and revision Ensure that each tasked organization updates SOPs Provide regular training of personnel as related to the EOP

- Special needs services at:
- Nursing homes
- Nurseries
- Kidney dialysis centers
- Prisons
- Casualty care and emergency medical services
- Social services
- Civilian-military relations
- Community outreach primary care

common to other hazards addressed in the functional annex. For example, the resultant number and severity of casualties caused by a hurricane will be much less than the number and severity of those caused by an earthquake, even though both may displace significant numbers of people from their homes. As another example, an urban firestorm would require different specific control measures compared with a hazardous material spill at sea. Hazard-specific appendices do not repeat those operations that have been described in the functional annex

Hazard-specific Appendices

Content. Hazard-specific appendices provide additional more detailed information applicable to the performance of a particular function in the face of a particular hazard. These are viewed as supplements to functional annexes. The decision to develop a hazard-specific appendix should be based on those special planning requirements not

Structure. Hazard-specific appendices also outline the unique operational issues of response according to core functions or tasks, as first described in the functional annexes. They may also include management matrix that graphically illustrate the responsible parties listed according to their tasks. This appendix then details how those specific functions may change according to the hazard. The

descriptive format for hazard-specific appendices follow the same structure as that of the basic plan and the functional annexes:

- Purpose
- Situation and assumptions
- Concept of operations
- Organization and assignment of responsibilities
- Administration and logistics
- Plan development and maintenance
- Authorities and references

Selection of hazard specific appendices. The decision on which hazards to include as appendices is unique to each jurisdiction. The EOP plan development process would have started with a research component. This research would include identification of potential hazards and profiles of their public health effects and consequences. The risks from these hazards would then be prioritized. After prioritization of risks, the functional annexes are assessed for the comprehensive applicability of all potential hazards. Hazard-specific appendices are used to supplement functional annexes when certain hazard situations may require operational detail beyond the scope of the functional annexes.

Examples of typical hazard-specific appendices include:

- Earthquake
- Flood/dam failure
- Hazardous materials
- Cyclone
- Volcanic eruption
- Landslide
- Transportation crashes
- Tornado

SOPs and checklists. SOPs and checklists provide the detailed instructions that an organization or a responder needs to fulfill responsibilities and perform tasks assigned in the EOP. Information and "how-to" instructions that need be known only by an individual or group can be left to SOPs; these may be annexed to the EOP or referenced as deemed

appropriate. SOPs should be developed by each organization responsible for actions under the EOP. SOPs provide the means to translate organizational responsibilities into specific action-oriented checklists that are very useful during emergency operations. They tell how each organization or agency will accomplish its assigned responsibilities.

Normally, SOPs may include:

- Checklists for step-by-step actions
- Call-down rosters
- Resource inventories
- Maps and charts

SOPs are detailed documents meant to provide step-by-step procedures to the individual responder for performing a specific task. This task may be identified within the basic plan, a functional annex or a hazard-specific appendix. Examples of SOP items may include the following actions:

- Notifying staff
- Obtaining and using equipment, supplies, and vehicles
- Obtaining mutual aid
- Reporting information to organizational work centers and the EOC
- Communicating with staff members who are operating from more than one location

Summary

EOPs are an important component of public health emergency preparedness. EOPs are developed according to an "all-hazard approach". These EOPs include a basic plan, functional annexes, hazard-specific appendices and SOPs.

Bibliography

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2. *Guide for All-Hazard Emergency Operations Planning, State & Local Guide 101*, U.S. Federal Emergency Management Agency, Washington, DC, 1996.

And all knowledge is vain save where there is work,
And all work is empty save when there is love

Kahlil Gibran